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# CropWatch No. 96-2, March 15, 1996

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# CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

No. 96-2
March 15, 1996

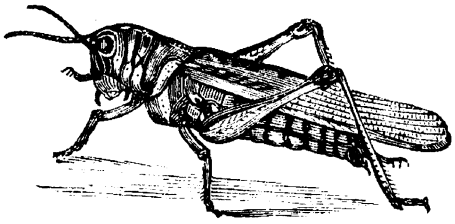

# Grasshopper numbers up in the west

Significant grasshopper populations are predicted in nearly all Nebraska grassland areas this season, continuing the situation established last year. In 1995 the wet spring and extensive grass growth substantially lessened the impact of the grasshopper populations. With a dry spring and summer this year, the potential for crop losses from grasshoppers will increase.

Most grasshopper species that affect crops deposit eggs in grassy areas adjacent to fields or in bunch grass crowns in rangeland. Those species hatch from mid-May into June. Climatic conditions at hatching can increase nymphal mortality. Cool, wet conditions or late freezes may contribute to most of the newly-hatched nymphs dying from disease or starvation —grasshoppers generally don't feed at temperatures below 45°F.

When deciding control efforts for crops, consider economic thresholds and controlling nymphs before they move far from the hatching area. Having 18-20 nymphs per square yard could cause economic crop losses. The economic threshold for adults is eight per square yard.

Consider climatic conditions when deciding about treatment. If moisture is plentiful, vegetation regrowth will allow the grasshoppers a good food supply without migration. Under hot dry conditions, regrowth will not occur and existing grass matures. This is less desirable for grasshoppers. Consequently, they move to areas with more lush vegetation -- often crops. Movement is accelerated when nymphs mature to adults which are winged and capable of flying considerable distances. If treatment is required, treat before the grasshoppers are mature. Nymphs require less area to be treated and lower rates or less toxic insecticides than would be needed with adults.



Alfalfa, soybeans and sunflowers usually suffer more grasshopper damage than corn. The corn canopy creates a barrier which generally limits grasshoppers to a few yards penetration around the field margins. If grasshoppers become a problem in alfalfa, it may not be necessary to treat the whole field. One of the primary grasshopper species found in Nebraska, *Melanoplus sanguinipes*, the lesser migratory grasshopper, may deposit eggs throughout an alfalfa field rather than in grassy field margin areas. As alfalfa is cut, grasshoppers move to uncut plants and eventually most of the hoppers will be concentrated in a relatively small portion of the field. This area can be treated. Select an insecticide that doesn't have undesirable harvest or grazing restrictions or is prohibited if the hay is to be used for lactating dairy cattle.

Grasshopper control on rangeland is generally not economically feasible, especially since federal and state cost-share programs are not available. Ranchers may consider protecting the more valuable forage, such as alfalfa or hay meadows, with barrier sprays. As the range grass matures, particularly during dry years, or if it becomes overgrazed, grasshoppers will move to greener more plentiful food areas (alfalfa, hay meadows). The range area bordering those greener areas can be sprayed with ground sprayers or aircraft which provide a protective barrier. An area two or three hundred yards wide should be adequate to prevent grasshoppers from moving to the better forage. Select an insecticide with good residual value; several will provide protection for two to three weeks. It may be necessary to treat the barrier two to three times if drought conditions exist early in the season and persist. If the grasshopper problem encompasses a large area, ranchers may want to cooperate and contract the spraying on a bid basis which should reduce the cost.


**Jack Campbell, Extension and Research Entomologist**
**West Central R&E Center**
**Gary Hein, Extension and Research Entomologist**
**Panhandle R&E Center**

# Prepacks lead the list of new herbicides

Herbicide manufacturers look at thousands of compounds each year. Only a few of them make it to the grower market. Many new herbicides have been registered in the past year and will be actively marketed by their manufacturer this coming season. Many more are currently under development and registration review which may allow them to be released in time for the 1996 growing season.

Most of the development continued to be with prepack herbicides. Many of these are combinations of individual herbicides which have proven performance and little crop injury potential.

Environmental concerns continue to play a role in herbicide development and use. Many of the newly labeled compounds are used in small amounts to reduce environmental risk.

## Labeled herbicides

**Basis** from DuPont is a selective postemergence grass compound for use in corn. It a combination of 50% rimsulfuron with 25% thifensulfuron (Pinnacle) for a 75% dry flowable formulation of the active ingredients. Rimsul-furon has a mode of action similar to **Accent** or **Beacon**.

**Broadstrike Plus** from DowElanco combines 0.23 lbs flumetsulam (Broadstrike) with 0.62 lbs of clopyralid (Stinger) per gallon for selective preemergence broadleaf control in corn. Stinger is used mainly as a postemergence treatment in sugarbeets but adds to the early broadleaf weed control of Broadstrike.

**Detail** from American Cyanamid contains 0.5 lbs imazaquin (Scepter) with 3.6 lbs dimethenamid (Frontier) per gallon for pre and early postemergence control of grass and broadleaves in soybeans.

**DoublePlay** from Zeneca combines 5.6 lbs EPTC (Eradicane) with 1.4 lbs of

*(Continued on page 13)*

## Briefs

### Pesticides and crop consultants

According to *Integrated Pest Management in the North Central States*, each year producers in the 12-state North Central Region spend over $3 billion on herbicides. Crop losses and pesticide costs for soybean diseases exceed $1.5 billion, while those for corn insects are between $1.5 and $3 billion.

The North Central Region Extension Publication No. 586 provides a brief picture of something that each state program is doing to encourage and develop the use of integrated pest management practices.

The same publication cited an Iowa State University survey of Iowa farmers who use and don't use crop consultants. When users were asked, "For every dollar you spend on your consultant, estimate how many dollars you receive in return?", 74% of the respondents indicated they received a $2-$5 return.

CROPWATCH



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Lisa Brown Jasa, Editor

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## New herbicides *(Continued from page 12)*

acetochlor (Surpass) per gallon for preplant incorporated selective grass control in corn.

**Exceed** from Ciba-Geigy combines 28.5% prosulfuron (Peak) with 28.5% primsulfuron (Beacon) for postemergence broadleaf and shattercane control in corn.

**Flexstar** from Zeneca is a 1 lb gal formulation of fomesafen for postemergenece broadleaf weed control in soybeans.

**Grazon P + D** from DowElanco combines .54 lb of picloram (Tordon) with 2.0 lb of 2,4-D for woody and perennial weed control in range and permanent grass pastures.

**Laddok S-12** from BASF combines 2.5 lbs of bentazon (Basagran) with 2.5 lbs of atrazine for a 5.0 lbs gallon. This is an increase in the active ingredient from Laddok which was 1.66 lbs bentazon and 1.66 lbs of atrazine. Used for postemergence broadleaf control in corn and sorghum.

**Permit** from Monsanto contains a 75% dry flowable formulation of halosulfuron for postemergence broadleaf control in corn and sorghum.

**Poast** from BASF has gained registration for use in corn which is resistant to the active ingredient sethoxydim.

**Prestige** from American Cyanamid contains sethoxydim and dash for selective postemergence grass control in soybeans.

**Prism** from Valent contains a 0.94 lb gallon of clethodim for selective postemergence grass control in onions and sugarbeets.

**Reliance** from DuPont is a combination of .32 oz of chlorimuron (Classic) and .18 oz of thifensulfuron (Pinnacle) for selective broadleaf control in STS (Sulfonylurea Tolerant Soybean) soybeans.

**Resource** from Valent is now labeled for postemergence broadleaf control in corn and soybeans. Resource contains a .86 lb gallon of flumiclorac and provides exceptional of velvetleaf.

**Roundup Ultra** is the new formulation of glyphosate from Monsanto which will replace Roundup for the agricultural market, including registration for use in Roundup Ready Soybeans which are resistant to the active ingredient glyphosate. Roundup Ultra contains the same amount of glyphosate per gallon for formulation (3 lb) and the rates per acre will remain the same as Roundup; however, it contains more surfactant and, therefore, will not require additional surfactant when applied at low rates and carrier volumes.

**Scorpion III** from DowElanco combines 9.3% flumetsulam (Broadstrike) with 25% clopyralid (Stinger) and 50% 2,4-D to equal .843 pounds active ingredient per pound of product. This product, which is a new name for Broadstrike Post Corn, is used for selective postemergence broadleaf weed control in corn.

**Status** from American Cyanamid contains acifluorfen for selective postemergence broadleaf control in soybeans.

**Steel** from American Cyanamid is a combination of 1.5 lb of imazequin (Scepter) and .2 lb of imazethapyr (Pursuit) and 2.7 lb of pendimethalin (Prowl) for preplant incorporated control of grass and broadleaves in soybeans.

**Stellar** from Valent is a premix of Cobra and Resource for postemergence broadleaf weed control in soybeans. The 5 ounce rate per acre is equivalent to 6 ounces of Cobra and 4 ounces of Resource per acre.

**Synchrony** form DuPont is a combination of .62 oz chlorimuron (Classic) and .23 oz thifensulfuron (Pinnacle) for postemergence broadleaf control in soybeans.

**TopNotch** from Zenecca is a 3.2 lb gallon of encapsulated formulation of acetochlor (Surpass) for selective pre-emergence grass control in corn.

**Ultima 160** from BASF is a 1.3 lb gallon formulation of sethoxydim for selective postemergence grass control in sugarbeets.

# Herbicides soon to be labeled

**Action** is currently under development from Ciba-Geigy for postemergence broadleaf weed control in corn and soybeans.

**Axiom** is being developed by Bayer for selective preemergence grass control in corn and soybeans.

**Authority** is being developed by FMC for selective postemergence weed control in soybeans.

**Expert** from Ciba-Geigy is being developed as a postemergence broadleaf weed control for use in soybeans.

**First Rate** from Dow is currently being developed for postemergence broadleaf weed control in soybeans.

**Liberty** from AgrEvo is a 1.67 lb gallon of glufosinate for use in herbicide resistant crops.

**Peak** is a 57% dry flowable formulation of prosulfuron which is being developed for pre and postemergence broadleaf control in sorghum and postemergence broadleaf control in cereals and

*(Continued on page 18)*

# Below normal temps predicted for summer

The dry pattern that became established last July continues to pose potential problems for the 1996 growing season in Nebraska Except for the Sandhills and extreme northeastern Nebraska, the state has received below normal precipitation for the period from Oct. 1, 1995 to Feb. 29, 1996. The southern quarter of the state has not even received half of normal precipitation.

The dry weather last July and August, coupled with above normal temperatures, severely depleted soil moisture reserves. Locations south of the Sandhills have received 1.5 to 4 inches of liquid equivalent precipitation during the last five months. If one assumes an optimistic forecast of 70% of this precipitation infiltrating into the soil, then there has only been 1 to 3 inches of recharge since last fall.

Except for northeast Nebraska, most locations where grain is the primary agricultural crop have soil moisture reserves under 50% of what they normally hold. Unless there is a dramatic shift from the current weather pattern to above normal precipitation during the next 45 days, grain crops will be extremely vulnerable to an extended period of dry weather .

To complicate matters further, most areas of western Texas, Oklahoma, and Kansas have not received significant precipitation since the beginning of 1996. With such an expansive area experiencing dry conditions, it will be harder to tap moisture from the Gulf of Mexico during the spring storm season.

Average relative humidity levels south of Nebraska during February have been similar to those normally experienced in the desert southwest. The last few storm systems that have entered the Central Plains have used most of the gulf moisture just to saturate the air. The result has been little, if any, significant precipitation. Preliminary estimates indicate that February 1996 was one of the top five driest since records began in 1875.

Short range models don't offer any immediate hope for improving moisture conditions. The trend for the next two weeks is for above normal temperatures and little significant precipitation. The outlook for April and the outlook for April through June don't indicate any definable trend. They both indicate equal chances for above normal, normal, and below normal temperatures and precipitation.

Long range models do offer a glimmer of hope for later in the growing season (*see maps, page 15*). Beginning with the June-August period, the models indicate that an area of below normal temperatures should develop over the western Central Plains and expand eastward through the fall harvest season. The long range models have been predicting this event for the last six months. Unfortunately, no observable precipitation trend is forecast.

Even though there is no model trend for precipitation, below normal temperatures during the summer would suggest increased cloudiness and rain. However, the area where the below normal temperatures first appear in the long lead outlooks is one of the driest in the nation.

Agricultural producers should be prepared to take appropriate steps this spring if significant rains do not occur in the next few weeks. Producers may want to consider adjusting production inputs to compensate for potentially low yields, especially on dry land acreage.

**Al Dutcher**
**State Meteorologist**
**Agricultural Meteorology**

# Crop management and diagnostic clinics to be held in July

Three two-day Crop Management and Diagnostic Clinics will be held in July at the University of Nebraska Agricultural Research and Development Center near Mead. Sessions will be from 8:30 a.m. to 5 p.m. July 16-17, 19-20 and 24-25. These clinics are designed for industry personnel, crop consultants, extension educators, governmental agency personnel, crop managers and producers.

The first day will include insect, weed and disease identification and management, and the second day will include soil fertility, soil and water management issues.

Dale Flowerday, Professor Emeritus of Agronomy at UNL, is coordinating the field activities of these two-day training sessions. UNL faculty teaching at the clinic will include Ken Frank, DeLynn Hay, Dave Holshouser, Paul Jasa, Alice Jones, Lenis Nelson, Z B Mayo, Alex Martin, Steve Mason, Jim Peterson, Rick Waldren, John Watkins, John Witkowski, Bob Wright and Dave Wysong.

The cost of each two-day clinic will be $225. Participants will receive training materials including a reference notebook. Most of

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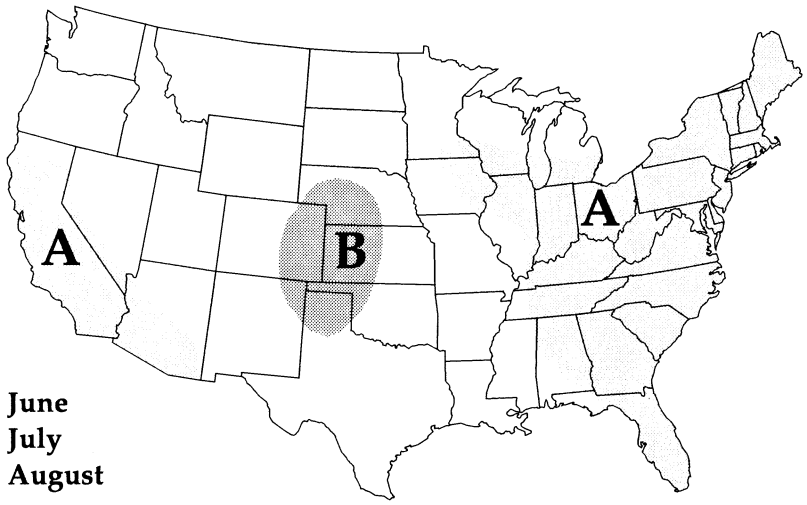
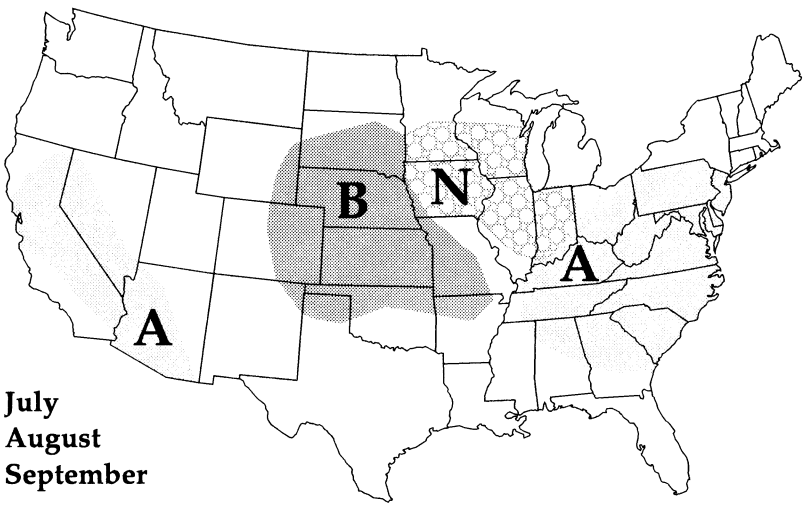
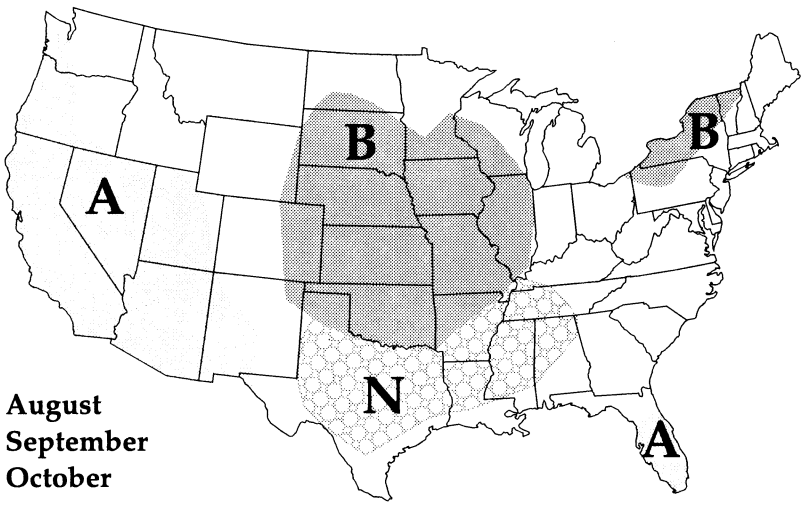


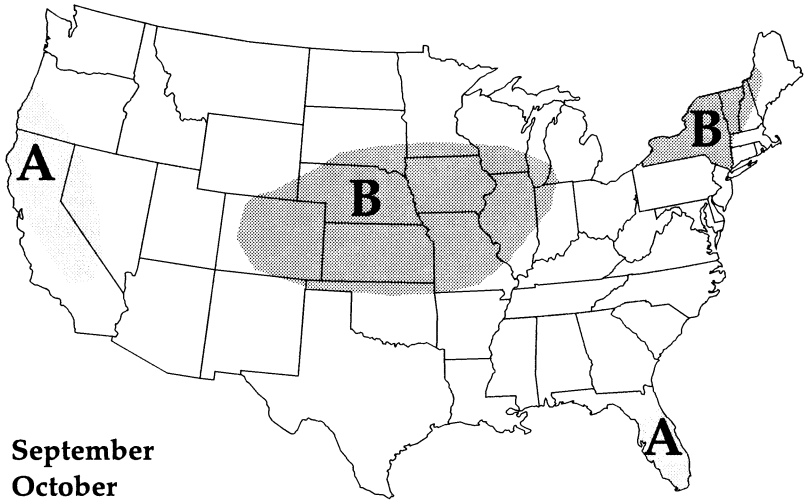

June
July
August




July
August
September




August
September
October




September
October
November

A B N

*Long lead temperature outlooks for the indicated time periods. Shaded areas indicate a greater tendency toward either A=Above, B=Below, or N=Normal temperature. Unshaded areas have equal chances of receiving above, below, and normal temperatures. Note that Nebraska is predicted to be in an area of below normal temperatures from July to November.*

# Combination herbicides

| *Trade name* | *Equivalent amount of each component contained in 1 gal or 1b of product* | *Manufacturer* |
|---|---|---|
| Basis | 50% rimsulfuron + 25% thifensulfuron | DuPont |
| Betamix | .65 lbs phenmedipham + .6 lbs desmedipham | Nor-Am |
| Betamix Progress | .6 lb phenmedipham + .6 lb desmedipham + .6 lb ethofumesate | Nor-Am |
| Bicep 6E | 3.33 lb metolachlor + 2.67 lb atrazine | Ciba |
| Bicep II | 3.30 lb metolachlor + 2.64 lb atrazine + benoxyaclor | Ciba |
| Bicep Lite | 3.33 lb metolachlor + 1.67 lb atrazine | Ciba |
| Broadstrike + Dual | 0.2 lb flumetsulam + 7.47 lb metolachlor | Dow Elanco |
| Broadstrike +Treflan | 0.25 lb flumetsulam + 3.4 lb trifluralin | Dow Elanco |
| Broadstrike Plus | .23 lb flumetsulam + .62 lb clopyralid | Dow Elanco |
| Bronate | 2 lb bromoxynil + 2 lb MCPA | Rhone-Poulenc |
| Bronco | 2.6 lb alachlor + 1.4 lb glyphosate | Monsanto |
| Buctril + Atrazine | 1 lb bromoxynil + 2.0 lb atrazine 4L | Rhone-Poulenc |
| Bullet | 2.5 lb alachlor + 1.5 lb atrazine | Monsanto |
| Cannon | 2.5 lb alachlor + 0.5 lb trifluralin | Monsanto |
| Canopy 75 DF | 0.64 lb metribuzin + 0.11 lb chlorimuron | DuPont |
| Commence 5.25 EC | 3 lb trifluralin + 2.25 lb clomazone | Elanco/FMC |
| Concert | 2 oz package equals .125 oz chlorimuron + .125 oz thifensulfuron | DuPont |
| Conclude | 2.67 lb bentazon + 1.33 lb acifluorfen + 1.5 lb sethoxydim | BASF |
| Contour | atrazine + imazethapyr, co-pack | Am. Cyanamid |
| Crossbow | 1 lb triclopyr + 2 lb 2,4-D | Dow Elanco |
| Curtail | 2.0 lb 2,4-D amine + .38 lb ai clopyralid | Dow Elanco |
| Cycle | 2.0 lb metolachlor + 2.0 lb cyanazine | Ciba |
| Detail | 3.6 lb dimethenamid + 0.5 lb imazaquin | Am. Cyanamid |
| Double Play | 5.6 lb EPTC + 1.4 lb acetochlor | Zenecca |
| Exceed | 28.5% prosulfuron + 28.5% primsulfuron | Ciba |
| Extrazine II 4-L | 3 lb cyanazine + 1.0 lb atrazine | DuPont |
| Fallow Master | 1.5 lb glyphosate + 0.6 lb dicamba | Monsanto |
| Finesse | .625 chlorimuron + .125 metribuzin | DuPont |
| Freedom | 2.67 lb alachlor + .33 lb trifluralin | Monsanto |
| Fusion 2.66E | 2 lb fluazifop + .66 lb fenoxaprop | ICI America |
| Galaxy | 3 lb bentazon + .67 lb acifluorfen | BASF |
| Gemini 60 DF | .55 lb linuron + .45 lb chlorimuron | DuPont |
| Grazon P + D | .54 lb picloram + 2.0 lb 2,4-D | Dow |
| Guardsman | 2.33 lb dimethenamid + 2.67 lb atrazine | Sandoz |

*(Continued on page 17)*

## Combination herbicides *(Continued from page 16)*

| *Trade name* | *Equivalent amount of each component contained in 1 gal or 1b of product* | *Manufacturer* |
|---|---|---|
| Harmony Extra | .50 lb thifensulfuron + .25 lb tribenuron | DuPont |
| Harness Xtra | 4.3 lb acetochlor + 1.8 lb atrazine | Monsanto |
| Laddok | 1.66 lb bentazon + 1.66 lb atrazine | BASF |
| Laddok S-12 | 2.5 lb bentazon + 2.5 lb atrazine | BASF |
| Landmaster BW | 1.2 lb glyphosate + 1.9 lb 2,4-D | Monsanto |
| Landmaster II | 1.2 lb glyphosate + 1.0 lb 2,4-D amine | Monsanto |
| Lariat 4 F | 2.5 lb alachlor + 1.5 lb atrazine | Monsanto |
| Lasso + Atrazine | 2.5 lb alachlor + 1.5 lb atrazine | Monsanto |
| Lorox Plus 60 DF | .57 lb linuron + 0.03 lb chlorimuron | DuPont |
| Marksman | 1.1 lb dicamba + 2.1 lb atrazine | Sandoz |
| Matrix 75 DF | 0.67 lb thifensulfuron + .033 lb tribenuronDuPont | |
| Milocep | 3.33 pt Milogard + 3.3 lb metolachlor | Ciba |
| Preview 75 DF | 0.69 lb metribuzin + .07 lb chlorimuron | DuPont |
| Pursuit Plus | 2.9 lb pendimethalin + 0.2 lb imazethapyr | Am. Cyanamid |
| Ramrod & Atrazine | 3 lb propachlor + 1 lb atrazine | Monsanto |
| Reliance | .32 oz chlorimuron + .18 oz thifensulfuron | DuPont |
| Rescue | 2 lb naptalam + .06 lb 2,4-DB | Uniroyal |
| Resolve | dicamba + imazethapyr, co-pack | Am.Cyanamid |
| Rezult | bentazon + sethoxydim | BASF |
| Salute 4 EC | 2.67 lb trifluralin + 1.33 lb metribuzin | Miles |
| Scepter O.T. | .5 lb imazaquin + 2 lb acifluofen | Am. Cyanamid |
| Scorpion III | 9.3% flumetsulam + 25% clopyralid + 50% 2,4-D | Dow Elanco |
| Shotgun | 2.5 lb atrazine + 1.5 lb 2,4-D | UAP |
| Squadron 2.33 EC | 2.0 lb pendimethalin + .33 lb imazaquin | Am. Cyanamid |
| Steel | 1.5 lb of imazequin + .2 lb of imazethapyr + 2.7 lb of pendimethalin | Am. Cyanamid |
| Stellar | .026 lb flumicorac + .093 lb lactofen | Valent |
| Surpass 100 | 3 lb acetochlor + 2.0 lb atrazine | Zeneca |
| Sutazine | 4.8 lb butylate + 1.2 lb atrazine | Zeneca |
| Sychrony | .62 oz chlorimuron + .18 oz thifensulfuron | DuPont |
| Trimec Super Brush Killer | 4 parts 2,4-D + 4 parts 2,4-D + 1 part dicamba | PBI-Gordon |
| Trimec Turf Herbicide | 2,4-D, MCPP, dicamba in 9:3:1 ratio | PBI-Gordon |
| Tri-Scept 3 E | 2.57 lb trifluralin + .43 imazaquin | Am. Cyanamid |
| Turbo 8 E | 6.55 lb metolachlor + 1.45 lb metribuzin | Miles |
| Turflon D | 2.0 lb 2,4-D ester + 1 lb triclopyr | Dow Elanco |

*Alternative crops*

# Green grow the markets for Nebraska's turfgrass seed

While waving fields of wheat used to be the norm in western Nebraska, now some Nebraska farmers are seeing their fields turn a profitable shade of green, turf grass green that is.

Turf grass seed production has had a rocky start in the Nebraska Panhandle, however, a long-term research commitment by the University of Nebraska and University of Wyoming, persistent growers, and seedsmen with vision have brought turf grass seed production to the point that it is a strong alternative crop for the region.

Turf grass seed is marketed to homeowners, golf courses, turf sod farms, and for landscaping around commercial buildings, parks and road rights of way. The economic value of turf grass seed has exceeded $150 million per year since 1990 in the United States. Most production is currently in the Pacific Northwest. Competition from other specialty crops and population expansion have limited available acres, forcing companies to look for alternative production regions.

At least three major seed companies are now willing to contract for seed production of specific turf varieties in this region. Practical experience in the region has progressed beyond "how not to do it" to "how to do it."

Turf grass seed production is not for everyone — it requires more management than crops such as irrigated wheat and corn. Typically, stands will be established in the early spring or late summer and the first crop will be harvested in July the next year. Stands are expected to be in production for three to five years.

The longevity of the stand makes turf seed production especially favorable in areas where erosion or low organic matter is a problem. The perennial, fibrous root system holds the soil in place and increases organic matter in the soil over the life of the crop. Many center pivot acres in the region could benefit from including turf grass seed production in the rotation. Turf grass seed is an ideal crop prior to dry edible beans or sugar beets because diseases, weeds, nematodes and soil borne insects of these crops can be controlled in the grass crop.

Thanks to the commitment of seedsmen, cleaning and processing facilities and infrastructure are available in the region. This, along with increased production experience, makes turf grass seed an economically promising crop for the region. Gross returns of $500 would be expected annually and potential returns could be much higher. Costs of production would be similar to alfalfa plus combining and seed processing.

For more information about production or marketing, contact one of the authors at the Panhandle Research and Extension Center at Scottsbluff at (308) 632-1230.

**David D. Baltensperger**
**Alternative Crops Specialist**
**Ray Weed**
**Ag Research Technician**
**Panhandle Research and Extension Center**

*During the next year,* CropWatch *will feature information on alternative crop opportunities available to or being tried by Nebraskans. Future stories will focus on sunflower production, specialty corns and beans, and the developing birdseed industry in western Nebraska.*

## Training

*(Continued from page 14)*

this training will be in the field so participants should bring rain gear if needed. On day one, participants will congregate at the new ARDC Research and Education Building at 8:30 a.m. to register. For more information about this clinic or for a registration form, call Keith Glewen, Extension Educator in Saunders County, at 402-624-8030 or Barb Ogg, Extension Assistant in Lancaster County at 402-441-7180.

## New herbicides

*(Continued from page 13)*

proso millet.

**Raptor** from American Cyanamid is under development as a selective postemergence broadleaf herbicide in soybeans.

**Stature** from American Cyanamid is being developed as a combination of Frontier and Pursuit for preemergence weed control in corn.